

TITLE

UMBRELLA UNDERCANOPY FASTENING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

[01] The present application is a nonprovisional application which claims the benefit of U.S. Provisional Application No. 60/448,704, filed February 18, 2003, entitled "Power Pole Patio Umbrella" and U.S. Provisional Application No. 60/541,526, filed February 3, 2004, also entitled "Power Pole Patio Umbrella."

BACKGROUND OF THE INVENTION

[02] The present invention relates to an umbrella canopy. More specifically, the present invention relates to a re-closable fastening system used with an umbrella canopy undercover.

[03] Outdoor umbrellas have become more popular with homeowners as the home entertaining dynamic has shifted more towards the outdoors. That is, the ability to use an outdoor area as an entertaining space is often seen as a desirable feature to a homeowner. The use of outdoor “patio” umbrellas has gained widespread acceptance and use by consumers. However, patio umbrellas often suffer from a lack of flexibility because they are not configurable by the consumer. The umbrella is typically a crafted object that may not be personalized or modified by the consumer. Additionally, as further discussed below, present lighting options for patio umbrellas may be unsatisfactory to the consumer for a variety of reasons.

[04] Patio umbrellas are often used with outdoor tables and generally are supported by a center pole rising up through the middle of the tables, although the umbrella may also be used in a stand-alone fashion. When open, the umbrellas provide shade and protection for the people sitting at the table. The tables are typically located on patios near swimming pools or other outdoor recreational areas and may be used in the evening at which time people sitting at them to eat, play games, etc. However, the umbrellas may provide insufficient illumination for these activities at night. Further, the tables may be located some distance away from a house, garage or other building on

which outdoor lights are installed. Consequently, the amount of light provided by these sources may be inadequate. Further, many of the tables are portable, so that even if they are initially located near an outdoor light, they may, on occasion, be moved to some more distant area where the lighting is inadequate.

[05] Attempts have been made to provide illumination for umbrellas using different lighting arrangements. Previous attempts to provide illumination include using three or four incandescent bulbs underneath the top and in the center of the umbrella to illuminate the area under the canopy. Fluorescent lighting has been located in the center support pole of the umbrella to illuminate the area underneath the canopy. All of these umbrella configurations are characterized by relatively concentrated light that may attract bugs and insects.

[06] Arrays of miniature lights that use household current to provide a substantial amount of illumination are known. Such lighting arrangements have been previously disclosed for use as Christmas tree decorations. Such lighting arrangements may provide a substantial, although relatively diffuse, amount of lighting, which is not attractive to bugs and insects. However, it should be appreciated that using one or more strings of miniature lights having hanging wiring may provide a hazard to people using the umbrella. Furthermore, such strings of miniature lights may have to be removed or repositioned prior to retracting the open canopy, to avoid damaging or destroying the lights.

[07] Further limitations and disadvantages of conventional and traditional approaches will become apparent to one of skill in the art, through comparison of such systems with the present invention as set forth in the remainder of the present application with reference to the drawings.

BRIEF SUMMARY OF THE INVENTION

[08] Features of the present invention relate to systems and methods for securing a lighting system to an undercanopy of an umbrella. One embodiment of the present invention relates to a fastening system comprising a first and second member. The first member has a first portion of a fastening device. The second member has a second portion of the fastening device adapted to engage the first portion of the fastening device in a reclosable manner.

[09] In at least one embodiment of the undercanopy fastening system the first and/or second members are either fixedly or movably connected to the undercanopy. The first member may include a bending portion, whereby at least a portion of the first member is adapted to move about the bending portion in a rotational or folding manner. The undercanopy fastening system may include at least a attachment portion fixedly secured to at least a portion of at least one of the undercanopy, the first member and the second member.

[10] In at least one embodiment, the fastening device of the undercanopy fastening system comprises opposing female and male snaps. However, the fastening device of the undercanopy fastening system may also comprise at least one of Velcro, magnets, hooks, clips and clasps.

[11] Another embodiment of the present invention relates to an umbrella apparatus. In this embodiment, the umbrella apparatus comprises at least a pole portion, a canopy

portion and at least one reclosable fastening system. The canopy portion may have at least an undercanopy portion, where the canopy portion is moveably coupled to the pole portion. Further, the at least one reclosable fastening system is coupled to the undercanopy portion.

[12] In at least one embodiment, the fastening system of the umbrella apparatus may comprise a first and second member. The first member has a first portion of a fastening device. The second member has a second portion of the fastening device adapted to engage the first portion of the fastening device in a reclosable manner.

[13] Still another embodiment of the present invention relates to a method for removably securing a lighting system to an umbrella undercanopy of an umbrella apparatus. This embodiment comprises positioning the lighting system in the umbrella apparatus. The lighting system is removably secured to the undercanopy using at least one reclosable fastening system.

[14] These and other advantages and novel features of the present invention, as well as details of an illustrated embodiment thereof, will be more fully understood from the following description and drawings.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

[15] Fig. 1A illustrates a perspective view of an umbrella viewed from underneath in accordance with one embodiment of the present invention.

[16] Fig. 1B illustrates an enlarged view of a fastening system used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

[17] Fig. 2A illustrates a perspective view of one fastening system in a closed or fastened position used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

[18] Fig. 2B illustrates a perspective view of the fastening system of FIG. 2A in an open or unfastened position used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

[19] Fig. 3A illustrates a perspective view of one fastening system in a closed or fastened position used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

[20] Fig. 3B illustrates a perspective view of the fastening system of Fig. 3A in an open or unfastened position used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

[21] Fig. 4A illustrates a perspective view of one fastening system in a closed or fastened position used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

[22] Fig. 4B illustrates a perspective view of the fastening system of FIG. 4A in an open or unfastened position used with an umbrella similar to that illustrated in Fig. 1A in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[23] The following description is made with reference to the appended figures.

[24] Referring to FIG. 1A in the drawings, an umbrella apparatus, generally designated 10, in accordance with one embodiment of the present invention is illustrated. Umbrella apparatus 10 includes a canopy portion 12 and a tubular pole portion 14. Pole portion 14 is coupled to and supports canopy portion 12.

[25] In at least one embodiment, canopy portion 12 is flexible and retractable and may be moved between a raised, or expanded open position (shown in FIG. 1A); and a lowered, or retracted, closed position in which canopy portion 12 is collapsed down about pole portion 14 (not shown but well known in the art). In at least one embodiment, canopy portion 12 comprises an overcanopy or upper surface 16 and opposing undercanopy or inner surface 18.

[26] Fig. 1A further illustrates at least one canopy rib 20 supporting the canopy portion 12. In at least one embodiment, a plurality of canopy ribs 20 are employed (eight canopy ribs 20 are illustrated, but more or fewer canopy ribs may be employed) fixed or coupled to undercanopy 18.

[27] As illustrated, canopy portion 12 is further supported by at least one support rib 22. Fig. 1A illustrates a plurality of support ribs 22 (eight support ribs 22 are illustrated but more or fewer support ribs may be employed). Support ribs 22 are, in at least one embodiment, movably coupled to at least the pole portion 14. In at least one embodiment, at least one support rib 22 is moveably or hingably coupled to the pole

portion 14 and at least one canopy rib 20. In the illustrated embodiment, each rib member 22 has a first end 24 moveably coupled to an upper portion 26 of the pole portion 14 and a second end 25 moveably coupled to at least one strut 20.

[28] In at least one embodiment, umbrella apparatus 10 includes an opening and closing system, generally designated 27, that aids in expanding canopy portion 12 into the open position and retracting canopy portion 12 into the closed position. In Fig. 1A, the opening and closing system 27 comprises a moveable or slidable case 28 and a manual crank 29, where the case 28 and the manual crank 29 are connected by a cable system or some other suitable connection device. As illustrated, case 28 is located on pole portion 14 proximate upper portion 26. In at least one embodiment, a least one support rib 22 is hingedly or moveably coupled to the case 28. Manual crank 29 is coupled to the case 28 so as to allow manual opening and closing of canopy portion 12 (using a hand crank for example). It should be appreciated that, while a manual device for opening and closing the canopy portion 12 is illustrated, other devices, including automatic opening/closing devices, may be employed.

[29] Umbrella apparatus 10 may include a base member adapted to receive pole portion 14 and to support the umbrella apparatus 10 in a generally upright position. Although not shown in the embodiment FIG. 1, other embodiments of the present invention depict a variety of conventional and novel base members, any of which may be utilized with the embodiment of FIG. 1. It should be understood that in all of the embodiments of the present invention provided herein, umbrella apparatus 10 may be

used without a base member, provided there is a table or some other support structure, including the ground, which may be adapted to receive pole portion 14. For example, many patio tables are designed with central apertures to receive, support, and stabilize relatively large umbrellas. In some cases, the patio tables eliminate the need for a base member all together.

[30] Fig. 1A further illustrates at least one fastening system, generally designated 30, coupled to the umbrella apparatus 10 in accordance with one embodiment of the present invention. In at least one embodiment of the present invention, a plurality of fastening systems 30 (24 fastening systems 30 are illustrated, but more or fewer fastening systems may be employed) are coupled or fixed to the umbrella apparatus 10.

[31] Fig. 1A illustrates a plurality of fastening systems 30 coupled or attached to the undercanopy 18 (in a fixed or removable fashion). In the illustrated embodiment, a plurality of reclosable fastening systems 30 are illustrated coupled to various portions of the undercanopy 18, and alternatively referred to as the canopy support fastening system 34, support rib fastening system 36 and canopy rib fastening system 38.

[32] In at least one embodiment, a plurality of the fastening systems 30 are coupled to undercanopy canopy 18 proximate to edge 40 of undercanopy 18 one or near at least one canopy rib support 20. Eight fastening systems 30 are illustrated coupled to the undercanopy 18 and alternatively referred to as canopy rib fastening system 38, where at least one canopy rib fastening system 38 is fixed on or near each of the canopy rib supports.

[33] Figs. 1A, 2A and 2B illustrate one embodiment of the fastening system 30, specifically, a canopy rib fastening system 38. In the illustrated embodiment, the fastening system 30 comprises an attachment portion 50 and a reclosable fastening portion 52. As illustrated, the attachment portion 50 comprises body 53 having edge 54. Body 53 is adapted to be secured or fixed to the undercanopy along at least a portion of edge 53 using stitching or glue for example. In the illustrated embodiment, body 53 is adapted to be secured to the undercanopy along three sides, forming opening 54. In at least one embodiment, opening 54 and attachment portion 50 form a pocket adapted to receive at least one canopy rib 20 in a removable manner.

[34] As illustrated, reclosable fastening portion 52 comprises first and second members 56 and 58. Fig. 2A depicts first member 56 having opposing first and second ends for 60 and 62. Additionally, second member 58 has first and second ends 64 and 66, respectively. In at least one embodiment, the first member 56 is attached to the attachment portion 50 in a moveable or bendable fashion. In one embodiment, only first member first end 60 is fixed (glued or stitched for example) to body 53 proximate opening 54, forming hinge or bending portion 68. Further, second member 58 is fixedly attached to body 53 (glued or stitched for example) along at least first and second ends 64 and 66 (or the entire edge of second member). In this manner, body 53 is fixably secured to the undercanopy 18, second member 58 is fixedly attached to body 53, while only one end of first member 56 is fixedly attached to body 53 such that the first member 56 may move about bending portion 68.

[35] As illustrated in Figs. 1A and 2B, reclosable fastening portion 52 further comprises a snap made up of female and male snap portions 70 and 72. In this embodiment, female snap 70 is connected or fixed to first member 56 while the male snap 72 is connected or fixed to second member 58. In the illustrated embodiment, the female snap 70 has a sealing portion or ring 74 which is adapted to engage indent 76 formed in male portion 72 in a removable or reclosable fashion, as is well known in the art. It should be appreciated that one particular type of snaps are discussed, any type of snaps may be employed.

[36] Figs. 3A and 3B illustrate another embodiment of fastening system 30, specifically a canopy support fastening system 34, in both a fastened and unfastened position. In at least one embodiment, a plurality of the canopy support fastening systems 34 are coupled to undercanopy 18 proximate to edge 40 of undercanopy 18 (best viewed in Fig. 1A). In the illustrated embodiment, eight fastening systems 34 are coupled to undercanopy 18 in a moveable or bendable fashion.

[37] In the illustrated embodiment, the fastening system 34 comprises at least reclosable fastening portion 152. Reclosable fastening portion 152 comprises first and second members 156 and 158. Fig. 3B depicts first member 156 having opposing first and second ends 160 and 162. Additionally, second member 158 has first and second ends 164 and 166, respectively. In at least one embodiment, the first member 158 is attached to at least the undercanopy 18. In one embodiment, only first member first end 160 is fixed (glued or stitched for example, forming hinge or bending portion 168.

Further, second member 158 is fixedly attached to the undercanopy (glued or stitched for example) along at least first and second ends 164 and 166 (or the entire edge of second member). In this manner, second member 158 is fixedly attached to the undercanopy while only one end of first member 156 is fixedly attached to the undercanopy such that the first member 156 may move about hinge 168.

[38] As illustrated in Fig. 3B reclosable fastening portion 152 further comprises a snap made up of female and male snap portions 170 and 172. In this embodiment, female snap 170 is connected or fixed to first member 156 while the male snap 172 is connected or fixed to second member 158. In the illustrated embodiment, the female snap 170 has a sealing portion or ring 174 which is adapted to engage indent 176 formed in male portion 172 in a removable or reclosable fashion, as is well known in the art.

[39] Figs. 4A and 4B illustrate another embodiment of fastening system 30, alternatively referred to as support rib fastening system 36, in both a fastened and unfastened position. In at least one embodiment, a plurality of the support rib fastening systems 36 are coupled to the undercanopy 18 proximate to support rib 22. In the illustrated embodiment, eight support rib fastening systems 36 are coupled to the undercanopy (one fastening system proximate each support rib) in a moveable or bendable fashion.

[40] In the illustrated embodiment, the fastening system 36 comprises at least reclosable fastening portion 252. Reclosable fastening portion 252 comprises first and

second member 256 and 258. Fig. 4A depicts first member 256 having opposing first and second ends 260 and 262. Additionally, second member 258 has first and second ends 264 and 266, respectively. In at least one embodiment, the first member 258 is attached to at least the undercanopy. In one embodiment, only first member first end 260 is fixed (glued or stitched for example, forming hinge or bending portion 268. Further, second member 258 is fixedly attached to undercanopy 18 (glued or stitched for example) along at least first and second ends 264 and 266 (or the entire edge of second member). In this manner, second member 258 is fixedly attached to canopy while only one end of first member 256 is fixedly attached to the undercanopy such that the first member 256 may move about hinge 268.

[41] As illustrated in Fig. 4B, reclosable fastening portion 252 further comprises a snap made up of female and male snap portions 270 and 272. In this embodiment, female snap 270 is connected or fixed to first member 256 while the male snap 272 is connected or fixed to second member 258. In the illustrated embodiment, the female snap 270 has a sealing portion or ring 274 which is adapted to engage indent 276 formed in male portion 272 in a removable or reclosable fashion, as is well known in the art.

[42] It should be appreciated that while one embodiment of snaps are illustrated, other resealable or reclosable devices (including different embodiments of snaps) may be employed. In one embodiment, the fastening portions may comprise opposing pieces of Velcro affixed to the first and second members, respectively. In this manner, the first

and second members may be closed using the Velcro as is well known in the art. Additionally, the fastening portion may further comprise any other reclosable or resealable device, such as magnets, zippers, hooks, clasps, or clips.

[43] Furthermore, it should be appreciated that while one particular arrangement of the fastening systems 30 is depicted, different arrangements may be employed. Additionally, while in at least one embodiment, the fastening systems 30 are fixedly secured to the undercanopy, the fastening system 30 may be removably fixed to the undercanopy 18. In one embodiment, Velcro could be attached to one or more portions of the undercanopy. The fastening systems 30 may employ an opposing piece of Velcro, wherein the attachment system 30 could be attached to the Velcro on the undercanopy in a movable manner. Additionally, magnets could be used wherein magnets may be affixed to the undercanopy in a plurality of positions. An opposing magnet may be fixed to the fastening system 30, allow the fastening system 30 to be moved to various positions on the undercanopy 18. Alternatively, only a single type of fastening system, such as that shown in Figure 1A, may be employed.

[44] In least one embodiment of the present invention, the fastening system 30 is adapted to be used with a lighting system, such as one or more strands of miniature lights or other type of lighting discussed previously. It should be appreciated that while one type of lighting is discussed, any type of lighting or other hanging device may be secured to and hung from the undercanopy using at least one embodiment of the present invention.

[45] Additionally, the wiring for such a lighting system may be positioned in the umbrella apparatus, as further described in U.S. Patent Application No. XX/XXX,XXX, filed February 18, 2004 entitled “Powered Patio Pole Umbrella”, which is hereby incorporated by reference in its entirety. As described in the indicated patent application, the wiring may be removably placed in the fastening system and the lighting suspended therefrom in a safe manner. This may ensure that the wiring may be out of the way of the people using the umbrella, but may help ensure that sufficient lighting is provided to the umbrella apparatus 10 and the surrounding area. Different fastening systems 30 could be utilized, providing different lighting arrangements. Further, since the fastening system is reclosable, the arrangement of the lighting system could be changed, or the lighting system removed prior to closing the canopy.

[46] In accordance with the previously identified patent application, the umbrella may include a power source (not shown). In this embodiment, the power source may comprise one or more outlets located on pole 14, the moveable or slidable case 28 and a manual crank 29 for example. The power source may provide electrical power to the lighting system.

[47] While the invention has been described with reference to certain embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from its scope. Therefore, it is

intended that the invention not be limited to the particular embodiment disclosed, but that the invention will include all embodiments falling within the scope of the appended claims.